

User Manual

AGRETO LoadCounter II M



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1 Introduction

Thank you for choosing an AGRETO Load Counter. You have acquired a robust tool for daily use.

Please read this manual carefully before using the equipment.

2 Scope of delivery

- 1 Display unit with sensor
- 1 Mounting plate
- 2 AAA batteries
- 1 Magnet with screw
- 5 Seals
- Mounting parts
- Manual

3 Intended use

The AGRETO LoadCounter II M is designed for counting loads on manure spreaders with scraper floors and other transport vehicles with moving parts. To record the loads, the meter's sensor must deliver an adjustable number of pulses per load.

Depending on the setting, the operating hours are also determined.

4 Security

4.1 Safety instructions for the buyer



Important!

Make sure that every person who works for the first time with the AGRETO LoadCounter, has read and understood this manual.

4.2 Safety instructions for the operator



DANGER!

The AGRETO LoadCounter may only be operated by persons who are familiar with the operation of the device.



CAUTION!

Keep the work area clean! Soiled areas contributes to accidents.



RISK!

Risk of injury from tip-over / fall and inattention while working with the measuring instrument during getting on and off the tractor.

4.3 Personal protective equipment



WARNING!

For individuals who work with the device or reside in the working area the wearing of safety shoes are required.

4.4 Residual risks

When using the device residual hazards for persons and objects may occur that can't be prevented by design or technical protection measures.



WARNING!

The AGRETO LoadCounter must not be operated in explosive areas.

5 Technical specifications

- Packaging dimensions: 220x160x50 mm (LxWxH)
- Package weight: 490 g
- Device dimensions: 73 x 52 x 33 mm (WxHxD)
- Weight: 280 g
- Dust and waterproof plastic housing
- 3 internal control buttons for configuration
- Six-digit display with 11 mm digit height
- Icons for displaying additional information
- Reed sensor with thread M12x1, cable length 3m
- Powered by 2 x AAA batteries
- Battery life approx. 3 years

6 Configuration

6.1 Selection of the operating mode

The AGRETO LoadCounter II M has 2 operating modes. In the first mode, only the amount of loads are counted, in the second mode additionally the working hours are counted.

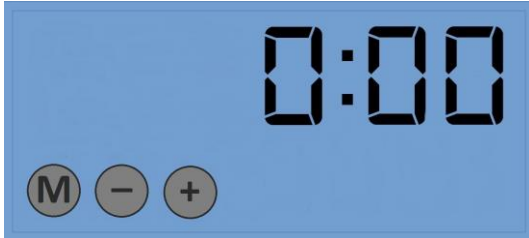
First, decide which operating mode is suitable to your application, set the required settings if necessary, and then mount the counter on your machine!

Overview of the modes:

Operating mode	Output	Activation by
5 A (default)	Loads	Sensor pulses
5 B	Loads Operation hours	Sensor pulses Vibration / movements

6.2 Operating Keys

The control buttons are located inside the device and accessible from the back with the mounting plate removed.



To change settings, look at the buttons and then turn the device with the display to the front to read the display.

Button	Definition	Function
M	Menu	Entry into the menu Continue to the next parameter, exit from the menu
-	Minus	Back to the previous step Decrease a parameter by 1
+	Plus	Continue to the next step Increase a parameter by 1

6.3 Setting the operating mode

On delivery, the operating mode 5A is preset.

To change the operating mode, press and hold the "M" button for 3 seconds. After releasing the key, the display briefly shows "MOdE" and then the current setting of the operating mode appears.

Change to the desired operating mode with the "+" or "-" buttons.

The "M" key (or if you wait 10 seconds) will save the selection and exit the menu.

Please note: Changing the operating mode will reset all totals to 0.

6.4 Process of detecting a load

The loads are recorded by the reed sensor, which must receive a certain number of impulses, and a pause time, which must then pass at least. If both conditions are met, a load is counted.

The minimum number of pulses ensures that even interruptions in the spreading process, and thus exceeding the break time, do not lead to an additional load (e.g. break while driving, longer drive at the headland, drive to the next field ...)

The pause time, in turn, ensures that no additional load is counted even if the scraper floor is running for a long time or a trailer is tipped up several times.

As soon as more than 100 impulses are required for a load, individual impulses that occur during the break are not recorded (for example if the PTO shaft moves a little while driving on the road).

This logic ensures the greatest possible security when recording the number of loads.

6.5 Setting the parameters

For the correct recording of the loads, the parameters for the number of pulses and the pause time may have to be adjusted. In mode 5B, the parameters for time recording are also available.

To open the parameter menu, briefly press the "M" key. The first parameter that is relevant for the set operating mode appears on the display.

The name of the parameter is displayed for two seconds, then the set value appears.

Use the "+" or "-" keys to change the value of the parameter. The value of the parameters IMP and dELA can be increased or decreased by 100 by pressing the button for more than a second.

Use the "M" key to change to the next parameter, the set value is saved. After the last parameter, the first parameter is displayed again.

To exit the menu, press and hold the "M" button for three seconds, or simply wait 10 seconds without pressing a button.

Parameter IMP - number of pulses

This parameter indicates how many impulses the device must at least receive from the sensor in order to count a load. A pulse always arises when the magnet turns or moves past the sensor.

1 = lowest number that can be set

10 = default setting

4000 = largest number that can be set

The number of pulses must be set for the application.

Example scraper floor shaft on the manure spreader:

Count or calculate the number of revolutions of the shaft that are necessary for a complete discharge (e.g. : 10 to 20). This number is set in the device. You can deduct a small safety reserve so that every load is counted safely. The set feed rate has no effect here.

Example PTO shaft on manure spreader:

Since the number of impulses is very high here, it is best to determine them over time. Let the PTO run at 540 revolutions per minute, set the highest feed rate and measure the time it takes for a complete emptying. If the process takes 1.5 minutes, for example, then multiply $540 \times 1.5 = 810$. After deducting a small safety margin, set 750 pulses, for example.

Example dumper:

Since the magnet delivers an impulse once when lifting and once when lowering, you have to set 2 as the number of impulses.

Example sliding wall on a push-off trailer:

Since the magnet delivers an impulse once when pushing the sliding wall and once when returning it, you have to set 2 as the number of pulses.

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Parameter dELA - (Delay) pause time

The pause time is the minimum time that must pass before a load can be counted. It starts to run when the sensor has delivered the set number of pulses and no longer delivers any pulses (for example, if the shaft stops rotating)

1 = lowest adjustable time in seconds

420 = default setting (7 minutes)

9999 = largest adjustable time in seconds

The pause time should include the travel time from the unloading point to the loading point (for example from the field to the farm), the time for the loading process itself and the travel time from the loading point to the unloading point (for example from the farm to the field).

The time should be measured in such a way that even a load without a long travel time is recorded. It is best to simply add up the time required for a loading process and 2 times the travel time to the nearest unloading location and set approx. 90% of this time.

Parameter SENS - Sensitivity (operating mode 5B)

This parameter determines from which intensity of a movement the count is triggered, ie how strong the vibration or movement must be. The higher the value, the stronger the movement must be to trigger or continue the count.

0 = highest sensitivity (counts even on very small movements)

2 = a running internal combustion engine is already detected

4 = default

10 = lowest sensitivity (only counts for extreme movements)

The parameter SENS is related to the parameter hoLd, since a movement must always have a certain intensity and must be present for a certain period of time in order to trigger the summation.

Parameter hoLd – Holding time (operating mode 5B)

In idle mode, this parameter determines the time in seconds that the counter waits after a first move to actually start the totalization permanently. If there is another movement within the set time (which is strong enough), the time from the first movement is added up and the counter is in counting mode. If there is

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no further movement within the set time, the counting is stopped and the sum is reset to the initial value.

1 = summation starts immediately after the first movement

20 = default

100 = summation is started after 100 seconds

In counting mode, this parameter determines the length of a rest period in seconds, during which the count continues without interruption. If another movement follows within the set time (which is strong enough), the complete time is added up, including the rest phase. If the rest period lasts longer than the set time, the count stops and the sum is reset to the value at the beginning of the rest phase. The meter is now in idle mode.

1 = summation is stopped immediately at the end of the movement

20 = default

100 = A rest period of up to 100 seconds is counted

Parameter Unitl - Display format (operating mode 5B)

This parameter determines the format of the hour display.

00:59 = default setting, display in hours and minutes (hhhh:mm)

00,99 = display in hours with 2 decimal places (hhhh,hh)

By default, the display is in hours and minutes, and the colon is used as the separator.

If necessary, you can change the display to decimal hours, here the comma is used as separator.

6.6 Zeroing the counter

To reset the counter, press and hold all 3 buttons together for 3 seconds. When released, all totals are set to 0.

7 Assembly

Only start with the assembly once you have clarified whether a change in the configuration is necessary for your application. Please read the chapter "Configuration" before.

7.1 Positioning the sensor and the magnet

The mounting location of the sensor and the magnet must be chosen in such a way that the magnet generates pulses in the sensor during the application process of a load or transport process. The magnet must move past the front end of the sensor at a distance of 5 to 8 mm.

Example scraper floor shaft on a manure spreader:

The magnet is attached to one of the scraper floor shafts. If there is no suitable option here, the magnet can also be attached to the side of a chain wheel or a flange. The sensor is attached to a frame part.

Example PTO shaft on a manure spreader:

The magnet is mounted on the trailer's PTO shaft stub, the flat bar for the sensor on a frame part. For this type of mounting, the optionally available magnetic ring can be used instead of the magnet.

Example dumper:

The magnet and the sensor are mounted at one point so that contact is made at least once during lifting and once during lowering.

Example sliding wall on a push-off trailer:

The magnet and the sensor are mounted at one point in such a way that contact is made at least once during pushing off of the load. A second contact is made when the sliding wall is returned.

7.2 Mounting the sensor and the magnet

Mount a fastening part for the sensor (for example a piece of flat iron) with a hole of 12.5 mm on the machine and fasten the sensor in the hole.

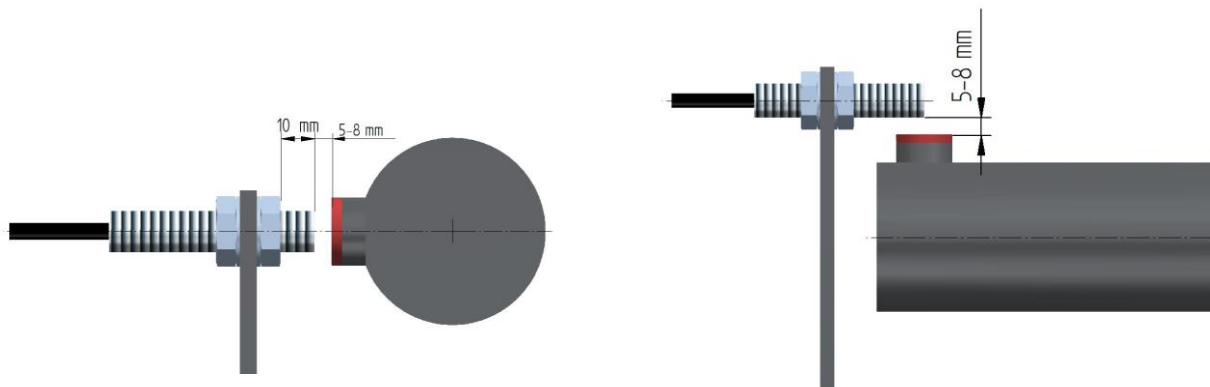
The sensor must protrude at least 10 mm from the bracket.

The sensor tip must be 5 to 8 mm away from the magnet.

A 5.5 mm hole or an M5 thread is required for the fastening the screw of the magnet.

The red side of the magnet must point towards the red sensor tip.

Under no circumstances the sensor should touch the magnet when the machine is working, otherwise it will be irreparably damaged.

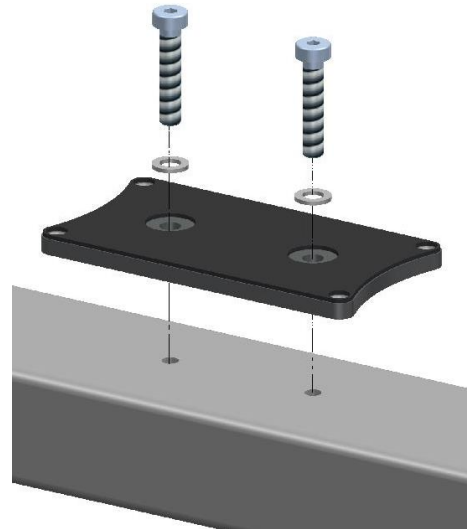


7.3 Positioning of the meter

Choose a location on the machine that is as protected as possible and still accessible, this also results in the routing of the sensor cable. The position of the meter is not relevant for operation.

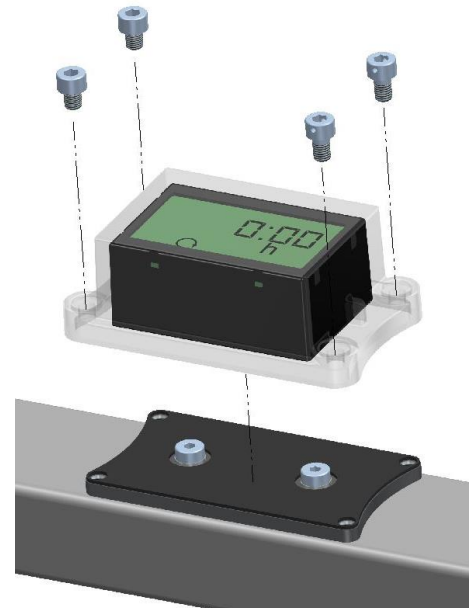
7.4 Fixing the mounting plate

- On delivery, the meter is mounted on the mounting plate. Disassemble the meter from the mounting plate.
- Hold the mounting plate in the desired position to the desired mounting position.
- Use the mounting plate as a template and mark the 2 holes with a pin.
- Hit one notch each with a grain.
- Drill the 2 holes with a 4.2 mm diameter drill.
- Deburr the 2 holes.
- Use a M5 screw tap to cut a thread in each hole.
- Use the 2 M5x25 allen screws and the 2 aluminum washers and screw the base plate to the machine. Note that the sealing surface of the base plate is pointing towards the meter.



7.5 Fastening the counter

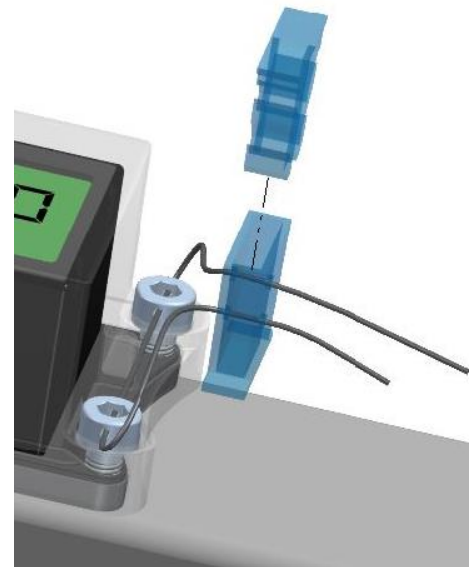
- Place the counter on the base plate.
- Use the 4 allen screws M5x8. Two of them have a small hole for the seal wire, use these two on the side where you want to attach the seal.
- First, pull slightly down all 4 screws, and then tighten every screw again so that the housing is evenly pressed against the mounting plate.



7.6 Attaching the seal

- Thread the seal wire through the holes in the two screws.
- Thread both ends of the wire through a hole in the seal.
- Slide the seal as close as possible to the meter and at the same time tighten the wire.
- Close the seal.

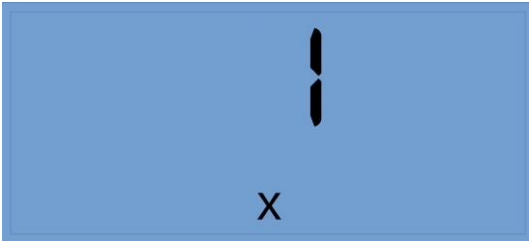
If the hole of one of the screws is not accessible, you can also drill a small hole in the housing bar between the two screws and pull through the seal wire here.



8 Working with the device

8.1 Reading the loads

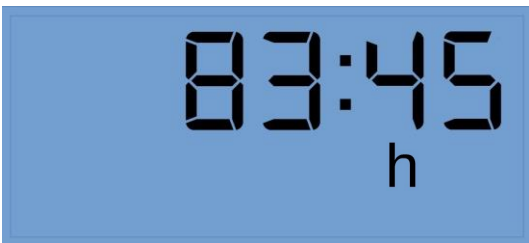
The LoadCounter permanently displays the sum of the counted loads, an operation for reading is not provided.



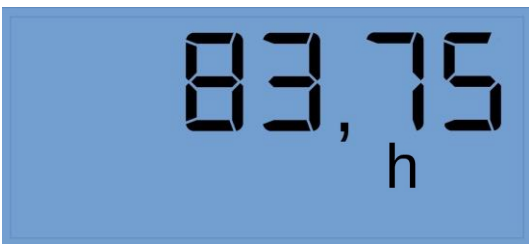
The symbol X indicates that the displayed number is the sum of the loads.

8.2 Reading the hours (operating mode 5B)

In operating mode 5B, the sum of the counted loads and the sum of the counted hours are displayed alternately at intervals of 5 seconds. The symbol h indicates that the number displayed is the sum of the hours.



If the colon is visible as a separator, it is hours and minutes.



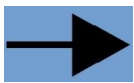
If the comma is visible as a delimiter, it is decimal with 2 decimal places.

The display is updated every 5 seconds.

8.3 Symbols on the display



Below the main display there are various icons for displaying additional information.



The arrow to the right means that the pause time is running now.



The wavy line means that the counter is currently detecting movement or vibration and is in counting mode.



The round arrow means that pulses are counted now.



The n lights up in the setting mode when entering the number of pulses.



The x means that the displaying of the loads is active.



The h means that the displaying of the hours is active.



The s lights up in the setting mode when a parameter value is expected in seconds.



The crossed-out battery icon lights when the batteries are low and you need to replace them.

9 Maintenance and cleaning

The Counter basically does not require ongoing maintenance.

- If the display is dirty, clean it for reading.
- If the battery symbol is lit, replace the batteries.

10 Troubleshooting

10.1 The battery symbol lights up

The batteries need to be replaced, follow these steps:

- Remove the seal and the seal wire.
- Remove the housing and remove the meter.
- Remove the old batteries and dispose them properly.
- Insert 2 new AAA batteries into the device in the specified direction.
- Mount the counter again on the mounting plate.
- Seal the device again with a new seal wire and a new seal.

10.2 Loads are not counted completely

The parameters may not be set correctly for your application.

- Set the pause time only high enough to be reached safely with each load.
- Only set the number of pulses high enough to ensure that they are reached with every load.
- Check the installation situation of the sensor, possibly move the sensor closer to the magnet.

10.3 Too many loads are counted

The parameters may not be set correctly for your application.

- If possible, set the pause time higher. However, always orientate yourself on a short transport process.
- Set the number of pulses higher, but they must still be reached safely with every load.

10.4 Operating hours are not counted completely

The movements or vibrations on the machine are probably relatively low, so that the necessary intensity for the count is not reached.

- Set the parameter **SENS** down so that the counter triggers even with minor movements.
- To hold longer periods of rest during operation, set the parameter **hOLd** upwards.

10.5 Too many operating hours are counted

Perhaps the machine is exposed to light movements at standstill, which are recorded as operating hours.

- Set the parameter **SENS** upwards so that the counter only triggers for larger movements
- To prevent idle phases from being counted during operation, set the **hOLd** parameter down.

10.6 Damage to the device

- Contact the manufacturer or your dealer

11 Warranty

In addition to the statutory warranty, the following warranty conditions apply to the AGRETO LoadCounter II M:

- The AGRETO electronics GmbH guarantees the function and repairs or replaces all the parts that have a material or manufacturing damage within the warranty period.
- Warranty services will be performed by the AGRETO electronics GmbH.
- The decision on the existence of a warranty claim is sole responsibility of the AGRETO electronics GmbH.
- The warranty period begins with the first accounting to an end customer and ends 5 years from this date of invoice.
- Prerequisite for warranty service are the presentation of the original invoice and compliance with all elements of this instruction manual.
- Excluded from warranty are wear, normal wear and tear, damage due to misuse, negligence or accident.
- When processing a warranty claim transport costs incurred will be charged to the buyer.

12 Disposal



Dispose of the device as part of the final shutdown or parts of it environmentally friendly and sorted (metal to the respective metal scrap, plastic to the plastic waste, etc. - do not dispose as household waste)!

Detailed information can be found in directive 2002/96 / EC

13 Imprint

All information, specifications and illustrations are as of 2021, subject to technical or design changes.

All information in this manual is supplied without liability despite careful preparation. A liability by the author is excluded.

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